U.S. NUCLEAR REGULATORY COMMISSION

STANDARD REVIEW PLAN

OFFICE OF NUCLEAR REACTOR REGULATION

9.2.4 POTABLE AND SANITARY WATER SYSTEMS

REVIEW RESPONSIBILITIES

Primary - Auxiliary Systems Branch (ASB)

Secondary - None

I. AREAS OF REVIEW

At the construction permit (CP) stage of review, ASB reviews the information in the applicant's safety analysis report (SAR) in the specific areas that follow. At the operating license (OL) stage, ASB review consists of confirming the design accepted at the CP stage.

1. The system descriptions for the potable and sanitary water systems (PSWS) are reviewed. The piping and instrumentation drawings (P&IDs) are reviewed at the OL stage.

2. System design criteria to prevent connection to systems having the potential for containing radioactive material are reviewed.

II. ACCEPTANCE CRITERIA

ASB accepts the design of the PSWS if the requirements of General Design Criterion 60 are met as it relates to design provisions provided to control the release of liquid effluents containing radioactive material from contaminating the PSWS. Compliance with GDC 60 is established if the following are met:

1. There are no interconnections between the PSWS and systems having the potential for containing radioactive material.

2. The potable water system is protected by an air gap, where necessary.

III. REVIEW PROCEDURES

The reviewer selects and emphasizes material from this SRP section, as may be appropriate for a particular case.

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In the review of the PSWS, ASB considers the design criteria to prevent cross connections, as described in the SAR. The P&IDs are reviewed at the OL stage to verify the absence of the potential for contamination of the PSWS with radioactive materials.

IV. EVALUATION FINDINGS

ASB determines that sufficient information has been provided and that the review supports conclusions of the following type, to be included in the staff's safety evaluation report:

> The potable and sanitary water systems (PSWS) include all components and piping from the supply connection to the municipal or other water source to all points of discharge to sewage facilities or other plant systems.
>
> Based on our review of the applicant's design criteria and design bases for the potable and sanitary water systems, we conclude that acceptable design provisions have been made to prevent the inadvertent contamination of the systems with radioactive material, and therefore find the proposed design of the potable and sanitary water system meets the requirement of GDC 60 and therefore is acceptable.

V. IMPLEMENTATION

The following is intended to provide guidance to applicants and licensees regarding the NRC staff's plans for using this SRP section.

Except in those cases in which the applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the method described herein will be used by the staff in its evaluation of conformance with Commission regulations.

VI. REFERENCES

1. 10 CFR Part 50, Appendix A, General Design Criterion 60, "Control of Releases of Radioactive Materials to the Environment."